We claim:

1. A method for processing one or more ordered sequences of PCM audio frames, comprising

appending to the beginning of frames, a segment of PCM audio that is substantially a replica of PCM audio in the end of the next preceding frame in an ordered

5   sequence, or, to the end of frames, a segment of PCM audio that is substantially a replica of PCM audio in the beginning of the next following frame in an ordered sequence, whereby modified frames are produced,

maintaining for the modified frames a sequential order that is the same as the order of one of said one or more ordered sequences of the PCM audio frames or assigning

10   a further sequential order to the modified frames, which sequential order is different from the order of one of said one or more ordered sequences of PCM audio frames, whereby the further sequential order has at least one discontinuity in its order with respect to the order of one of said one or more ordered sequences of PCM audio frames,

fading up the PCM audio appended to the beginning of the modified frame

15   following a discontinuity and fading down the PCM audio in the end of the modified frame preceding a discontinuity when segments are appended to the beginning of frames or fading down the PCM audio appended to the end of the modified frame preceding a discontinuity and fading up the PCM audio in the beginning of the modified frame following a discontinuity when segments are appended to the end of frames,

20   overlapping and additively combining the faded-up and faded-down PCM audio preceding and following a discontinuity in the sequence of faded-up and faded-down modified frames, and

removing the segment of PCM audio appended to a modified frame in sequential pairs of modified frames and joining the resulting PCM audio frames when the sequential

25   pair of modified frames does not contain a discontinuity following or preceding the appendage,

whereby a further ordered sequence of PCM audio frames is provided having the same order as one of said one or more ordered sequences of PCM audio frames or having one or more discontinuities between sequences of PCM audio frames, each of said

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30   sequences having the same order as one of said one or more ordered sequences of PCM

audio frames or a portion thereof, discontinuities having an associated PCM audio

crossfaded portion where said faded-up and faded-down PCM audio is overlapped and

combined.

2. A method for processing one or more ordered sequences of PCM audio frames,

comprising

appending only to the beginning of frames, a segment of PCM audio that is

substantially a replica of PCM audio in the end of the next preceding frame in an ordered

5   sequence, or, to the end of frames, a segment of PCM audio that is substantially a replica

of PCM audio in the beginning of the next following frame in an ordered sequence,

whereby modified frames are produced, and

transmitting, storing, or transmitting and storing the modified frames.

3. A method according to claim 2 further comprising time compressing the

modified frames and wherein said transmitting, storing, or transmitting and storing

transmits, stores, or transmits and stores time-compressed modified frames.

4. A method according to claim 2 further comprising time compressing and

encoding the modified frames and wherein said transmitting, storing, or transmitting and

storing transmits, stores, or transmits and stores time-compressed and encoded modified

frames.

5. A method for processing PCM audio data, comprising

receiving modified PCM audio frames, wherein the modified frames were

produced by processing one or more ordered sequences of PCM audio frames by

appending to the beginning of frames, a segment of PCM audio that is substantially a

5   replica of PCM audio in the end of the next preceding frame in an ordered sequence, or,

to the end of frames, a segment of PCM audio that is substantially a replica of PCM audio

in the beginning of the next following frame in an ordered sequence,

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maintaining for the modified frames a sequential order that is the same as the
order of one of said one or more ordered sequences of the PCM audio frames or assigning
10   a further sequential order to the modified frames, which sequential order is different from
the order of one of said one or more ordered sequences of PCM audio frames, whereby
the further sequential order has at least one discontinuity in its order with respect to the
order of one of said one or more ordered sequences of PCM audio frames,

fading up the PCM audio appended to the beginning of the modified frame
15   following a discontinuity and fading down the PCM audio in the end of the modified
frame preceding a discontinuity when segments are appended to the beginning of frames
or fading down the PCM audio appended to the end of the modified frame preceding a
discontinuity and fading up the PCM audio in the beginning of the modified frame
following a discontinuity when segments are appended to the end of frames,

20   overlapping and additively combining the faded-up and faded-down PCM audio
preceding and following a discontinuity in the sequence of faded-up and faded-down
modified frames, and

removing the segment of PCM audio appended to a modified frame in sequential
pairs of modified frames and joining the resulting PCM audio frames when the sequential
25   pair of modified frames does not contain a discontinuity following or preceding the
appendage,

whereby a further ordered sequence of PCM audio frames is provided having the
same order as one of said one or more ordered sequences of PCM audio frames or having
one or more discontinuities between sequences of PCM audio frames, each of said
30   sequences having the same order as one of said one or more ordered sequences of PCM
audio frames or a portion thereof, discontinuities having an associated PCM audio
crossfaded portion where said faded-up and faded-down PCM audio is overlapped and
combined.

6. The method of claim 5 wherein the received modified PCM audio frames are
time-compressed, the method further comprising time decompressing the received
modified PCM audio frames.

7. The method of claim 5 wherein the received modified PCM audio frames are time-compressed and encoded, the method further comprising time decompressing and decoding the received modified PCM audio frames.

8. A method for processing PCM audio data, comprising
receiving modified PCM audio frames, wherein the modified frames
were produced by processing one or more ordered sequences of
PCM audio frames by appending to the beginning of frames, a segment of
PCM audio that is substantially a replica of PCM audio in the end of the
next preceding frame in an ordered sequence, or, to the end of frames, a
segment of PCM audio that is substantially a replica of PCM audio in the
beginning of the next following frame in an ordered sequence, and
have a sequential order that is the same as the order of one of said
one or more ordered sequences of the PCM audio frames or have a further
sequential order, which sequential order is different from the order of one
of said one or more ordered sequences of PCM audio frames, whereby the
further sequential order has at least one discontinuity in its order with
respect to the order of one of said one or more ordered sequences of PCM
audio frames,
fading up the PCM audio appended to the beginning of the modified frame
following a discontinuity and fading down the PCM audio in the end of the modified
frame preceding a discontinuity when segments are appended to the beginning of frames
or fading down the PCM audio appended to the end of the modified frame preceding a
discontinuity and fading up the PCM audio in the beginning of the modified frame
following a discontinuity when segments are appended to the end of frames,
overlapping and additively combining the faded-up and faded-down PCM audio
preceding and following a discontinuity in the sequence of faded-up and faded-down
modified frames, and
removing the segment of PCM audio appended to a modified frame in sequential
pairs of modified frames and joining the resulting PCM audio frames when the sequential

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pair of modified frames does not contain a discontinuity following or preceding the appendage,

whereby a further ordered sequence of PCM audio frames is provided having the same order as one of said one or more ordered sequences of PCM audio frames or having one or more discontinuities between sequences of PCM audio frames, each of said sequences having the same order as one of said one or more ordered sequences of PCM audio frames or a portion thereof, discontinuities having an associated PCM audio crossfaded portion where said faded-up and faded-down PCM audio is overlapped and combined.

9. The method of claim 8 wherein the received modified PCM audio frames are time-compressed, the method further comprising time decompressing the received modified PCM audio frames.

10. The method of claim 8 wherein the received modified PCM audio frames are time-compressed and encoded, the method further comprising time decompressing and decoding the received modified PCM audio frames.

11. The method of claim 8 further comprising

maintaining for the modified frames a sequential order that is the same as their order as received, whereby the modified frames may have a sequential order that has at least one discontinuity in its order with respect to the order of one of said one or more ordered sequences of PCM audio frames, or assigning a further sequential order to the modified frames, which sequential order is different from their order as received, whereby the further sequential order has at least one discontinuity in its order with respect to the order of one of said one or more ordered sequences of PCM audio frames.

12. A method for processing one or more ordered sequences of PCM audio frames, comprising

appending to the beginning of frames, a segment of PCM audio that is substantially a replica of PCM audio in the end of the next preceding frame in an ordered

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5 sequence, or, to the end of frames, a segment of PCM audio that is substantially a replica of PCM audio in the beginning of the next following frame in an ordered sequence, whereby modified frames are produced,

fading up the PCM audio appended to the beginning of modified frames and fading down the PCM audio in the end of modified frames when segments are appended

10 to the beginning of frames or fading down the PCM audio appended to the end of modified frames and fading up the PCM audio in the beginning of modified frames when segments are appended to the end of frames,

maintaining for the modified frames or for the faded-up and faded-down modified frames a sequential order that is the same as the order of one of said one or more ordered

15 sequences of the PCM audio frames or assigning a further sequential order to the modified frames or to the faded-up and faded-down modified frames, which sequence is different from the order of one of said one or more ordered sequences of PCM audio frames, whereby the further sequential order has at least one discontinuity in its order with respect to the order of one of said one or more ordered sequences of PCM audio

20 frames, and

overlapping and additively combining sequential pairs of faded-up and faded-down PCM audio in the sequence of faded-up and faded-down modified frames having a sequential order that is the same as the order of one of said one or more ordered sequences of the PCM audio frames or having said further sequential order,

25 whereby a further ordered sequence of PCM audio frames is provided having the same order as one of said one or more ordered sequences of PCM audio frames or having one or more discontinuities between sequences of PCM audio frames, each of said sequences having the same order as one of said one or more ordered sequences of PCM audio frames or a portion thereof, consecutive pairs in the further order of PCM audio

30 frames having an associated PCM audio crossfaded portion where said faded-up and faded-down PCM audio is overlapped and combined.

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13. A method for processing one or more ordered sequences of PCM audio frames, comprising

appending only to the beginning of frames, a segment of PCM audio that is substantially a replica of PCM audio in the end of the next preceding frame in an ordered

5   sequence, or, to the end of frames, a segment of PCM audio that is substantially a replica of PCM audio in the beginning of the next following frame in an ordered sequence, whereby modified frames are produced,

fading up the PCM audio appended to the beginning of modified frames and fading down the PCM audio in the end of modified frames when segments are appended

10   to the beginning of frames or fading down the PCM audio appended to the end of modified frames and fading up the PCM audio in the beginning of modified frames when segments are appended to the end of frames, and

transmitting, storing, or transmitting and storing the faded-up and faded-down modified frames.

14. A method according to claim 13 further comprising time compressing the faded-up and faded-down modified frames and wherein said transmitting, storing, or transmitting and storing transmits, stores, or transmits and stores time-compressed faded-up and faded-down modified frames.

15. A method according to claim 13 further comprising time compressing and encoding the faded-up and faded-down modified frames and wherein said transmitting, storing, or transmitting and storing transmits, stores, or transmits and stores time-compressed, encoded, faded-up and faded-down modified frames.

16. A method according to claim 8 wherein the fade-up and faded-down modified frames were produced by processing that multiplies a portion of PCM audio by a fading function and subtracts the portion of PCM audio resulting from the multiplication from another portion of PCM audio.

17. A method for processing PCM audio, comprising

receiving faded-up and faded-down modified PCM audio frames, wherein the faded-up and faded-down modified frames were produced by processing one or more ordered sequences of PCM audio frames by

5   appending to the beginning of frames, a segment of PCM audio that is substantially a replica of PCM audio in the end of the next preceding frame in an ordered sequence, or, to the end of frames, a segment of PCM audio that is substantially a replica of PCM audio in the beginning of the next following frame in an ordered sequence, and

10   fading up the PCM audio appended to the beginning of modified frames and fading down the PCM audio in the end of modified frames when segments are appended to the beginning of frames or fading down the PCM audio appended to the end of modified frames and fading up the PCM audio in the beginning of modified frames when segments are

15   appended to the end of frames,

maintaining for the faded-up and faded-down modified frames a sequential order that is the same as the order of one of said one or more ordered sequences of the PCM audio frames or assigning a further sequential order to the faded-up and faded-down modified frames, which sequence is different from the order of one of said one or more

20 ordered sequences of PCM audio frames, whereby the further sequential order has at least one discontinuity in its order with respect to the order of one of said one or more ordered sequences of PCM audio frames, and

overlapping and additively combining sequential pairs of faded-up and faded-down PCM audio in the sequence of faded-up and faded-down modified frames,

25   whereby a further ordered sequence of PCM audio frames is provided in which consecutive pairs of PCM audio frames have a PCM audio crossfaded portion where said faded-up and faded-down PCM audio is overlapped and combined.

18. The method of claim 17 wherein the received faded-up and faded-down modified PCM audio frames are time-compressed, the method further comprising time decompressing the received modified PCM audio frames.

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19. The method of claim 17 wherein the received faded-up and faded-down modified PCM audio frames are time-compressed and encoded, the method further comprising time decompressing and decoding the received modified PCM audio frames.

20. The method of claim 19 wherein the received faded-up and faded-down modified PCM audio frames are encoded with a lossless coding.

21. A method according to claim 17 or 20 wherein the fade-up and faded-down modified frames were produced by processing that multiplies a portion of PCM audio by a fading function and subtracts the portion of PCM audio resulting from the multiplication from another portion of PCM audio and wherein the further sequence of
5   PCM audio frames have the same order as at least a portion of the received ordered sequence of PCM audio frames, whereby the further sequence of PCM audio frames constitutes a substantially identical reconstruction of said at least a portion of the received ordered sequence of PCM audio frames.

22. A method for processing PCM audio, comprising
      receiving faded-up and faded-down modified PCM audio frames, wherein the faded-up and faded-down modified frames were produced by processing one or more ordered sequences of PCM audio frames by
5   appending to the beginning of frames, a segment of PCM audio that is substantially a replica of PCM audio in the end of the next preceding frame in an ordered sequence, or, to the end of frames, a segment of PCM audio that is substantially a replica of PCM audio in the beginning of the next following frame in an ordered sequence, and
10   fading up the PCM audio appended to the beginning of modified frames and fading down the PCM audio in the end of modified frames when segments are appended to the beginning of frames or fading down the PCM audio appended to the end of modified frames and fading up the

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15   PCM audio in the beginning of modified frames when segments are
            appended to the end of frames,

                    wherein the faded-up and faded-down modified PCM audio frames

            have a sequential order that is the same as the order of one of said one or

            more ordered sequences of the PCM audio frames or have a further

            sequential order, which sequential order is different from the order of one

20   of said one or more ordered sequences of PCM audio frames, whereby the

            further sequential order has at least one discontinuity in its order with

            respect to the order of one of said one or more ordered sequences of PCM

            audio frames, and

            overlapping and additively combining sequential pairs of faded-up and faded-

25 down PCM audio in the sequence of faded-up and faded-down modified frames,

            whereby a further ordered sequence of PCM audio frames is provided in which

    consecutive pairs of PCM audio frames have a PCM audio crossfaded portion where said

    faded-up and faded-down PCM audio is overlapped and combined.

            23. The method of claim 22 wherein the received faded-up and faded-down

    modified PCM audio frames are time-compressed, the method further comprising time

    decompressing the received modified PCM audio frames.

            24. The method of claim 22 wherein the received faded-up and faded-down

    modified PCM audio frames are time-compressed and encoded, the method further

    comprising time decompressing and decoding the received modified PCM audio frames.

            25. The method of claim 24 wherein the received faded-up and faded-down

    modified PCM audio frames are encoded with a lossless coding.

            26. A method according to claim 22 or 25 wherein the fade-up and faded-down

    modified frames were produced by processing that multiplies a portion of PCM audio by

    a fading function and subtracts the portion of PCM audio resulting from the

    multiplication from another portion of PCM audio and wherein the further sequence of

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5   PCM audio frames have the same order as at least a portion of the received ordered

sequence of PCM audio frames, whereby the further sequence of PCM audio frames

constitutes a substantially identical reconstruction of said at least a portion of the received

ordered sequence of PCM audio frames.

27.   The method of claim 22 further comprising

maintaining for the modified frames a sequential order that is the same as their

order as received, whereby the modified frames may have a sequential order that has at

least one discontinuity in its order with respect to the order of one of said one or more

5   ordered sequences of PCM audio frames, or assigning a further sequential order to the

modified frames, which sequential order is different from their order as received,

whereby the further sequential order has at least one discontinuity in its order with

respect to the order of one of said one or more ordered sequences of PCM audio frames.

28.   A method for processing PCM audio, comprising

receiving modified PCM audio frames, wherein the modified frames were

produced by processing one or more ordered sequences of PCM audio frames by

appending to the beginning of frames, a segment of PCM audio that is substantially a

5   replica of PCM audio in the end of the next preceding frame in an ordered sequence, or,

to the end of frames, a segment of PCM audio that is substantially a replica of PCM audio

in the beginning of the next following frame in an ordered sequence,

fading up the PCM audio appended to the beginning of modified frames and

fading down the PCM audio in the end of modified frames when segments are appended

10   to the beginning of frames or fading down the PCM audio appended to the end of

modified frames and fading up the PCM audio in the beginning of modified frames when

segments are appended to the end of frames,

maintaining for the modified frames or for the faded-up and faded-down modified

frames a sequential order that is the same as the order of one of said one or more ordered

15   sequences of the PCM audio frames or assigning a further sequential order to the

modified frames or to the faded-up and faded-down modified frames, which sequence is

different from the order of one of said one or more ordered sequences of PCM audio

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frames, whereby the further sequential order has at least one discontinuity in its order with respect to the order of one of said one or more ordered sequences of PCM audio

20   frames, and

overlapping and additively combining sequential pairs of faded-up and faded-down PCM audio in the sequence of faded-up and faded-down modified frames, having a sequential order that is the same as the order of one of said one or more ordered sequences of the PCM audio frames or having said further sequential order,

25   whereby a further ordered sequence of PCM audio frames is provided in which consecutive pairs of PCM audio frames have a PCM audio crossfaded portion where said faded-up and faded-down PCM audio is overlapped and combined.

29.   The method of claim 28 wherein the received modified PCM audio frames are time-compressed, the method further comprising time decompressing the received modified PCM audio frames.

30.   The method of claim 28 wherein the received modified PCM audio frames are time-compressed and encoded, the method further comprising time decompressing and decoding the received modified PCM audio frames.

31.   The method of claim 30 wherein the received modified PCM audio frames are encoded with a lossless coding.

32.   A method according to claim 28 or 31 wherein wherein fading up and fading down includes multiplying a portion of PCM audio by a fading function and subtracting the portion of PCM audio resulting from the multiplication from another portion of PCM and wherein the further sequence of PCM audio frames have the same order as at least a

5   portion of the received ordered sequence of PCM audio frames, whereby the further sequence of PCM audio frames constitutes a substantially identical reconstruction of said at least a portion of the received ordered sequence of PCM audio frames.

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33. A method for processing PCM audio, comprising

receiving modified PCM audio frames, wherein the modified frames

were produced by processing one or more ordered sequences of PCM audio

frames by appending to the beginning of frames, a segment of PCM audio that is

5   substantially a replica of PCM audio in the end of the next preceding frame in an ordered

sequence, or, to the end of frames, a segment of PCM audio that is substantially a replica

of PCM audio in the beginning of the next following frame in an ordered sequence, and

have a sequential order that is the same as the order of one of said one or more

ordered sequences of the PCM audio frames or have a further sequential order, which

10   sequential order is different from the order of one of said one or more ordered sequences

of PCM audio frames, whereby the further sequential order has at least one discontinuity

in its order with respect to the order of one of said one or more ordered sequences of

PCM audio frames,

fading up the PCM audio appended to the beginning of modified frames and

15   fading down the PCM audio in the end of modified frames when segments are appended

to the beginning of frames or fading down the PCM audio appended to the end of

modified frames and fading up the PCM audio in the beginning of modified frames when

segments are appended to the end of frames, and

overlapping and additively combining sequential pairs of faded-up and faded-

20   down PCM audio in the sequence of faded-up and faded-down modified frames,

whereby a further ordered sequence of PCM audio frames is provided in which

consecutive pairs of PCM audio frames have a PCM audio crossfaded portion where said

faded-up and faded-down PCM audio is overlapped and combined.

34. The method of claim 33 wherein the received faded-up and faded-down

modified PCM audio frames are time-compressed, the method further comprising time

decompressing the received modified PCM audio frames.

35. The method of claim 33 wherein the received faded-up and faded-down

modified PCM audio frames are time-compressed and encoded, the method further

comprising time decompressing and decoding the received modified PCM audio frames.

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36. The method of claim 33 further comprising

maintaining for the modified frames a sequential order that is the same as their order as received, whereby the modified frames may have a sequential order that has at least one discontinuity in its order with respect to the order of one of said one or more ordered sequences of PCM audio frames, or assigning a further sequential order to the modified frames, which sequential order is different from their order as received, whereby the further sequential order has at least one discontinuity in its order with respect to the order of one of said one or more ordered sequences of PCM audio frames.

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